

## 5A,50-1000V Standard Rectifiers

### Features

- Low leakage current
- Low forward voltage drop
- Glass passivated chip junction
- Moisture sensitivity: level 1, per J-STD-020
- Halogen-free according to IEC 61249-2-21 definition
- High temperature soldering guaranteed: 260°C/10 seconds



**RoHS**  
COMPLIANT



eSGC (TO-277B)

### Applications

For use of general purpose rectification in lighting, cellular phone, portable device, power supplies and other consumer applications.

### Maximum Ratings & Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)

Parameter	Symbol	SGC0501A	SGC0502A	SGC0503A	SGC0504A	SGC0505A	SGC0506A	SGC0507A	Unit
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V <sub>RMS</sub>	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	V <sub>DC</sub>	50	100	200	400	600	800	1000	V
Maximum average forward rectified current	I <sub>F(AV)</sub>	5							A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load per diode	I <sub>FSM</sub>	150							A
Operating junction temperature range	T <sub>J</sub>	-55 to +150							°C
Storage temperature range	T <sub>STG</sub>	-55 to +150							°C

### Thermal-Mechanical Specifications (T<sub>A</sub>=25°C unless otherwise noted)

Parameter	Symbol	Typ	Unit
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	40	°C /W
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	15	°C /W
Thermal Resistance, Junction to Lead	R <sub>θJL</sub>	7	°C /W

## Electrical Specifications (T<sub>A</sub>=25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	SGC0501A	SGC0502A	SGC0503A	SGC0504A	SGC0505A	SGC0506A	SGC0507A	Unit
Forward Drop Voltage	V <sub>F</sub>	I <sub>F</sub> =5A	1.1							V
Reverse leakage current @V <sub>R</sub>	I <sub>R</sub>	T <sub>J</sub> =25°C	5							uA
		T <sub>J</sub> =125°C	100							
Typical junction capacitance	C <sub>J</sub>	4.0 V 1 MHz	30							pF
Typical reverse recovery time	t <sub>rr</sub>	I <sub>F</sub> =0.5A, I <sub>R</sub> =1.0A, I <sub>RR</sub> =0.25A	3.4							uS

Note:

1. Mounted on copper pad area of 30 x 30mm to each terminal.

## Ratings and Characteristics Curves

(TA = 25°C unless otherwise noted)

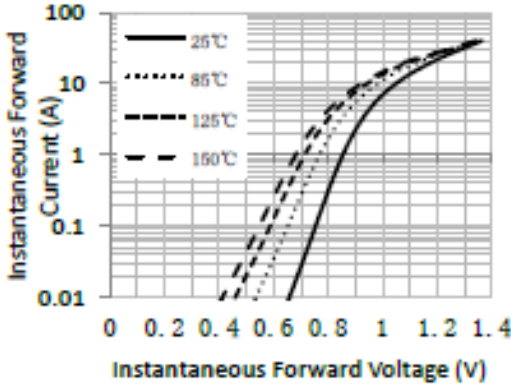


Figure 1. Typical Instantaneous Forward Characteristics

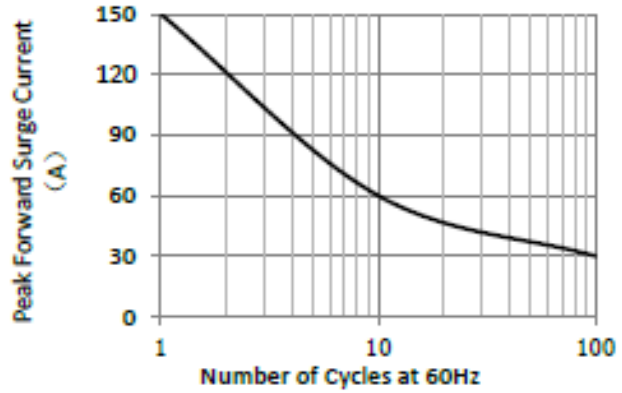


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

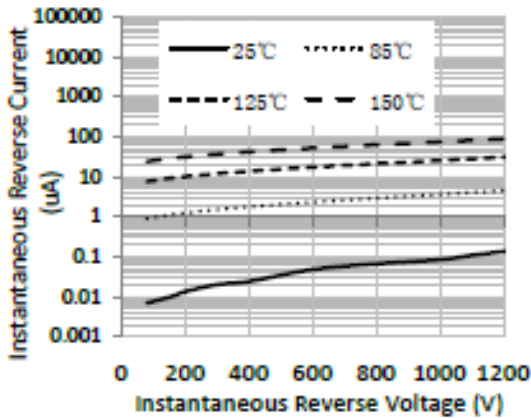


Figure 3. Typical Reverse Characteristics

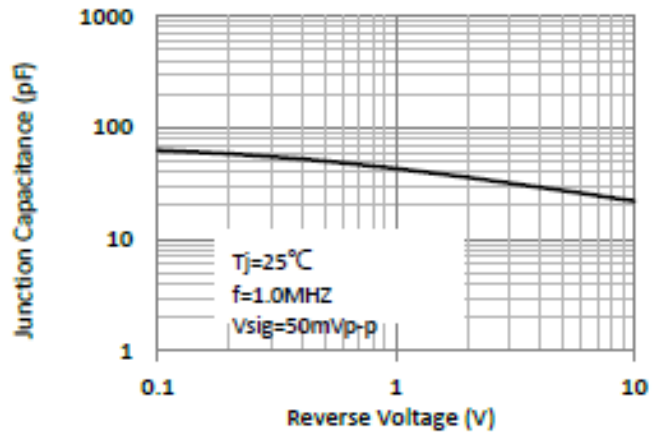


Figure 4. Typical Junction Capacitance

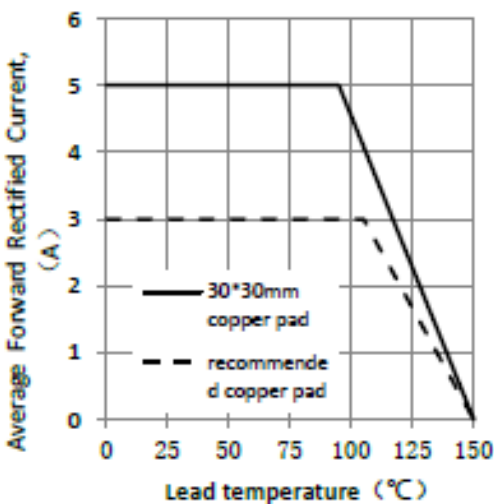
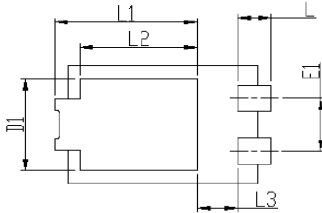
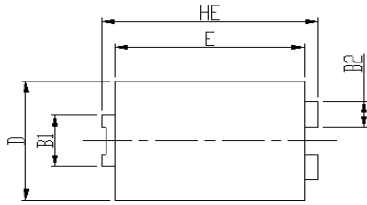


Figure 5. Forward Current Derating Curve

## Package Outline Dimensions

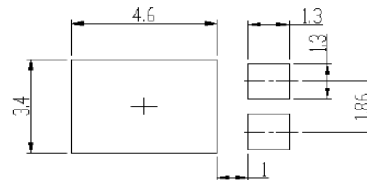
in inches (millimeters)

### eSGC (TO-277B)



DIM	Unit: mm		Unit: inch	
	MIN	MAX	MIN	MAX
HE	6.4	6.6	0.252	0.260
E	5.6	5.8	0.220	0.228
D	4.1	4.3	0.161	0.169
B1	1.7	1.9	0.067	0.075
B2	0.8	1	0.031	0.039
A	1.05	1.2	0.041	0.047
C	0.3	0.4	0.012	0.016
L	0.85	1.1	0.033	0.043
L1	4.2	4.4	0.165	0.173
L2	3.52 Typ.		0.139 Typ.	
L3	1.1	1.4	0.043	0.055
D1	3	3.3	0.118	0.130
E1	1.86 Typ.		0.073 Typ.	

Soldering footprint



## Revision History

Document Version	Date of release	Description of changes
Rev.A	2021.06.01	Released Datasheet
Rev.B	2023.10.13	Modify document format
Rev.C	2023.12.29	Modify package name

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